

REMARKS

In the Office Action dated May 20, 2010, the Examiner rejects claims 1, 3, 5, 11-15, 17, 19 and 20 under 35 U.S.C. § 102(e) and rejects claims 1, 3-15 and 17-20 under 35 U.S.C. §103(a). With this Amendment, Applicants have not amended, added or canceled claims. After entry of this Amendment, claims 1, 3-15 and 17-20 remain pending in the Application. Reconsideration of the Application based on the remarks below is respectfully requested.

Response to rejections under 35 U.S.C. §102(e)

Claims 1, 3, 5, 11-15, 17, 19 and 20 are rejected under 35 U.S.C. § 102(e) as being anticipated by Nagayama et al. (US 2005/0208347). Independent claims 1, 13-15 and 17 all include the following limitation: a discharge circuit printed on one or more of the positive-electrode layer, the negative electrode layer and electrolyte layer within each electric cell, the discharge circuit configured within each bipolar electrode to electrically balance charged conditions of adjacent electric cells. The Examiner contends on page 3 of the Office Action that Nagayama et al. discloses a discharge circuit 50 printed on one or more of the positive-electrode layer 28, the negative electrode layer 26 and electrolyte layer 27 within each cell. This is not disclosed by Nagayama et al. Nagayama et al. discloses a diode region 24 having groups of diodes 50 disposed on one side of each of current collecting bodies 22 that form a bipolar electrode 30. ([0034]). FIG. 4 is a cross-sectional view of an electrode cell 40 that clearly illustrates the diodes 50 contacting collector 22B and layered in the direction of collector 22A with an electrically conducting adhesive agent layer 36 between the upper diode 50 and collector 22A. This is described in paragraph [0036]: "The group of diodes 50 are (*sic*) electrically insulated from the positive pole 28 and the negative pole 26 by the sealing part 25."

Nagayama et al. clearly fails to disclose at least one element required by each of the independent claims, namely that of a discharge circuit printed on one or more of the positive-electrode layer, the negative electrode layer and electrolyte layer within each electric cell, the discharge circuit configured within each bipolar electrode to electrically balance charged conditions of adjacent electric cells. Accordingly, the invention of claims 1, 13-15 and 17, and claims 3, 5, 11, 12, 19 and 20 by their dependency, is not anticipated by Nagayama et al. These

claims are thus allowable over the cited reference.

Response to rejections under 35 U.S.C. §103(a)

Claim 4 is rejected under 35 U.S.C. §103(a) as being unpatentable over Nagayama et al. (US 2005/0208347) as applied to claim 1 above, and further in view of Einthoven et al. (US 2003/0205775). Claim 4 depends from claim 1 to include all of the limitations therein. As explained above, Nagayama et al. fails to teach or suggest at least one element of claim 1. Einthoven et al. also does not teach or suggest a discharge circuit printed on one or more of the positive-electrode layer, the negative electrode layer and electrolyte layer within each electric cell. Accordingly, the combination of the two fails to suggest to one skilled in the art such a discharge circuit. Due at least to its dependency on claim 1, the invention of claim 4 is not rendered obvious by the cited combination, and claim 4 is allowable over the cited references.

Claims 6-10 and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Nagayama et al. (US 2005/0208347) as applied to claim 1 above, and further in view of Horie et al. (US 2001/0019794). Claims 6-10 and 18 depend from claim 1 to include all of the limitations therein. As explained above, Nagayama et al. fails to teach or suggest at least one element of claim 1. Horie et al. also does not teach or suggest this missing element, a discharge circuit printed on one or more of the positive-electrode layer, the negative electrode layer and electrolyte layer within each electric cell. Accordingly, the combination of the two fails to suggest to one skilled in the art such a discharge circuit. Due at least to their dependency on claim 1, the invention of claims 6-10 and 18 is not rendered obvious by the cited combination. Thus, claims 6-10 and 18 are allowable over the cited references.

Claims 1, 3, 5, 11-15, 17, 19 and 20 are rejected under 35 U.S.C. §103(a) as being unpatentable over Hisamitsu et al. (US 2004/0038123) in view of Nakanaga et al. (JP 02044660, see English-language abstract). As noted by the Examiner on page 11 of the Office Action, Hisamitsu et al. fails to disclose a discharge circuit printed on one or more of the positive-electrode layer, the negative electrode layer and electrolyte layer within each electric

cell. The Examiner contends on page 11 of the Office Action that Hisamitsu et al. discloses a discharge circuit 50 configured within each bipolar electrode 30. This is not disclosed by Hisamitsu et al. Hisamitsu et al. states in paragraphs [0121]-[0127] and shows in FIGS. 12 and 13 of the fourth embodiment that the circuit 50 is in the unit cell controller unit CU1 ([0127]) and connected to the bipolar electrodes of the battery through tabs 400, 401 and 402 ([0121]). Accordingly, the circuit 50 is not printed as claimed and cannot be the discharge circuit of the claims.

One skilled in the art would recognize that Nakanaga et al. discloses a stainless steel plate 8 (positive collector), positive electrode layer 7, electrolyte 6, lithium foil 5 (negative electrode) and a stainless plate 4 (negative collector) on which a reverse current preventing diode having a metal terminal 1 is laminated. This is shown in FIGS. 1 and 4. Clearly, Nakanaga et al. fails to disclose a discharge circuit printed on one or more of the positive-electrode layer, the negative electrode layer and electrolyte layer within each electric cell, as the only circuit disclosed by Nakanaga et al. is laminated between the negative collector 4 and a metal terminal 1. Accordingly, the combination of Hisamitsu et al. and Nakanaga et al. fails to suggest to one skilled in the art a discharge circuit printed on one or more of the positive-electrode layer, the negative electrode layer and electrolyte layer within each electric cell.

As this limitation is recited in independent claims 1, 13-15 and 17, the cited references fail to teach or suggest all the features of these claims, making these claims allowable. In addition, claims 3, 5, 11, 12, 19 and 20 are also allowable at least due to at least their dependency on claim 1.

Claim 4 is rejected under 35 U.S.C. §103(a) as being unpatentable over Hisamitsu et al. (US 2004/0038123) in view of Nakanaga et al. (JP 02044660, see English-language abstract) as applied to claim 1 above, and further in view of Einthoven et al. (US 2003/0205775). Claim 4 depends from claim 1 to include all of the limitations therein. As explained above, the combination of Hisamitsu et al. and Nakanaga et al. fails to teach or suggest at least one element of claim 1. Einthoven et al. also does not teach or suggest a discharge circuit printed on one or more of the positive-electrode layer, the negative electrode layer and electrolyte layer within each

electric cell. Accordingly, the combination of the three fails to suggest to one skilled in the art such a discharge circuit, rendering claim 1 allowable over the cited references. Due at least to its dependency on claim 1, claim 4 is also allowable over the cited references.

Claims 6-10 and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Hisamitsu et al. (US 2004/0038123) in view of Nakanaga et al. (JP 02044660, see English-language abstract) as applied to claim 1 above, and further in view of Horie et al. (US 2001/0019794). Claims 6-10 and 18 depend from claim 1 to include all of the limitations therein. As explained above, the combination of Hisamitsu et al. and Nakanaga et al. fails to teach or suggest at least one element of claim 1. Einthoven et al. also does not teach or suggest a discharge circuit printed on one or more of the positive-electrode layer, the negative electrode layer and electrolyte layer within each electric cell. Accordingly, the combination of the three fails to suggest to one skilled in the art such a discharge circuit, rendering claim 1 allowable over the cited references. Due at least to its dependency on claim 1, claims 6-10 and 18 are also allowable over the cited references.

Conclusion

It is submitted that this Amendment has antecedent basis in the Application as originally filed, including the specification, claims and drawings, and that this Amendment does not add any new subject matter to the application. Reconsideration of the Application as amended is requested. It is respectfully submitted that this Amendment places the Application in suitable condition for allowance; notice of which is requested.

If the Examiner feels that prosecution of the present Application can be expedited by way of an Examiner's amendment, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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A handwritten signature in cursive script that reads "Francine Nesti".

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